

CLAIMS

What is claimed is:

1. A permanent magnet structure, comprising:
a carrier; and
plural permanent magnets positioned on at least one side of the carrier for realizing a flat arrangement of the permanent magnets.
2. The structure of claim 1, wherein the carrier is a sleeve.
3. The structure of claim 1, wherein the carrier is made of soft magnetic material.
4. The structure of claim 1, wherein the carrier is made of amagnetic material.
5. The structure of claim 1, wherein the carrier is made of amagnetic material containing carbon fibers.
6. The structure of claim 5, wherein the carbon-fiber containing material is CFK.

7. The structure of claim 1, and further comprising a further carrier, said plural permanent magnets being sandwiched between the carriers, wherein one of the carriers is made of amagnetic material and the other one of the carriers is made of soft magnetic material.
8. The structure of claim 7, wherein the permanent magnets have a radial thickness of: 3.5 mm, the amagnetic carrier material has a thickness of 0.5-1.0 mm, and the soft-magnetic carrier material has a thickness of 0.5 mm.
9. The structure of claim 7, wherein the permanent magnets are potted between the carriers within a casting compound.
10. The structure of claim 1 having a configuration at least partly resembling a cylindrical jacket, wherein the permanent magnets are arranged axially behind one another or in axially offset relationship according to a predefined pattern.
11. The structure of claim 1, wherein the permanent magnets are arranged on the carrier to form a joint-type relationship to realize a flexibility of the structure.

12. The structure of claim 1, wherein the permanent magnets have a thickness which is at least twice a thickness of the carrier.
13. In a permanent-magnet excited synchronous motor having a rotor, which turns relative to a stator and includes a permanent magnet structure, wherein the permanent magnet structure comprises a carrier, and plural permanent magnets positioned on at least one side of the carrier for realizing a flat arrangement of the permanent magnets.
14. The permanent-magnet excited synchronous motor of claim 13, wherein the structure is attached to a shaft by at least a process selected from the group consisting of shrinking, form-fitting securement, and material-interconnecting engagement, to thereby form the rotor.
15. The permanent-magnet excited synchronous motor of claim 13 for use in a synchronous hollow-shaft drive in machine tools or electrically propelled vehicles.